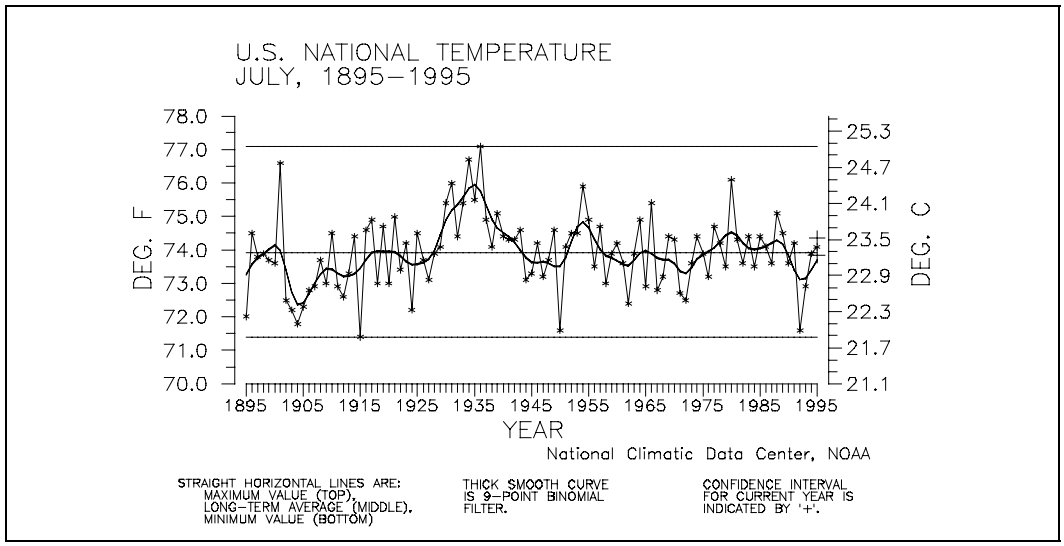
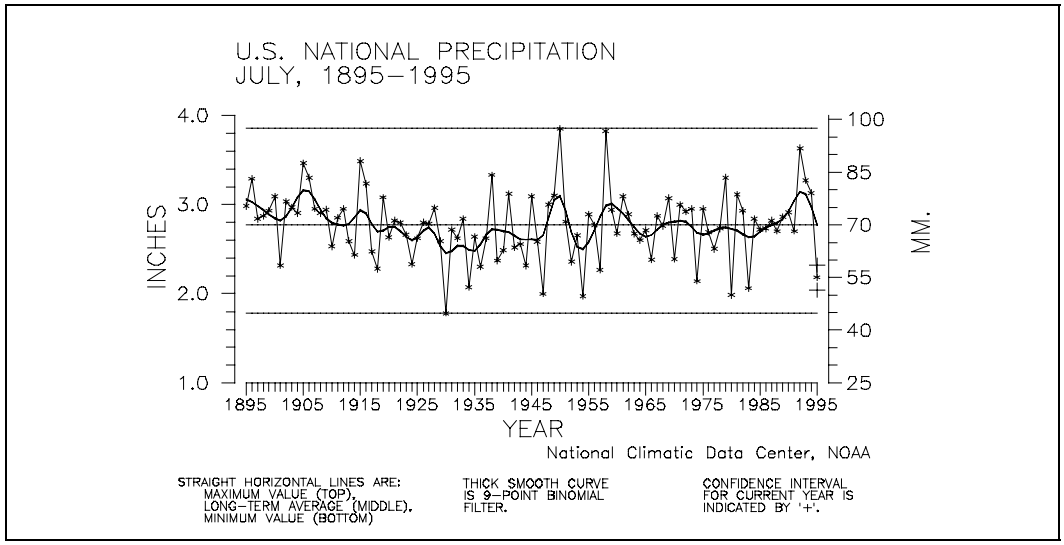
JULY 1995 **HISTORICAL CLIMATOLOGY SERIES 4-7**
Volume 7 Number 7

CLIMATE VARIATIONS BULLETIN





noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Analysis Center, and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

The narrative, tables, and graphs in the CVB are also available via automated facsimile. The previous month's summary can be obtained after the tenth of the month by dialing 704-271-4570 and selecting the appropriate menu codes. A touch-tone fax machine is required.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server
URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server
Machine: ftp.ncdc.noaa.gov
Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES JULY CLIMATE IN HISTORICAL PERSPECTIVE

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Preliminary data for July 1995 indicate that temperature averaged across the contiguous United States was near the long-term mean (see Figure 1). July 1995, with an averaged temperature of 74.1° (F), ranked as the 50th warmest July since national records began in 1895. The 1995 value is based on preliminary data, which has been shown to be within 0.26°F (0.14°C) of the final data over a 46-month period. This confidence interval is indicated in the figure by '+'. The darker smooth curve is a nine-point binomial filter that averages out the year-to-year fluctuations and shows the longer-term variations. Fifteen percent of the country averaged much warmer than normal while 12.9% of the country averaged much cooler than normal for July 1995.

With an areally-averaged national precipitation value of 2.18 inches, July 1995 was the 8th driest July on record. The preliminary value for precipitation is estimated to be accurate to within 0.14 inches (3.56 millimeters) and the confidence interval is plotted in Figure 2 as a '+'. Nearly a third (30.6%) of the country experienced much drier than normal conditions while only 7.1% was much wetter than normal.

Historical precipitation is shown in a different way in Figure 3. The July precipitation for each climate division in the contiguous U.S. was first standardized using the gamma distribution over the 1931-90 period. These gamma-standardized values were then weighted by area and averaged to determine a national standardized precipitation value. These national weighted values were then normalized over their period of record. Negative values are drier and positive values are wetter than the mean. This index gives a more accurate indication of how precipitation across the country compares to the local normal (60-year average) climate. The national standardized precipitation ranked July 1995 as the 2nd driest such month on record.

In order to show more of a historical perspective, the precipitation and temperature rankings for the periods July 1995, June-July 1995, February-July 1995, and August 1994-July 1995 for the nine climatically homogeneous regions, as well as the national rankings, are listed in Table 1.

The regional rankings for temperature for the month of July indicate that the West-North Central region had their 27th coolest July since 1895 (Figure 11), making four consecutive years with below to much below normal July temperatures. The western third of the country experienced cooler than normal temperatures with the Northwest and Southwest regions having their 29th coolest July on record while the West region had their 33rd coolest July since 1895. To the other extreme, it was the eighth warmest July since records began for the Northeast region (Figure 12), making the third consecutive year with much above normal July temperatures for the region, and the tenth warmest July since 1895 for the Southeast region.

July 1995 continued the trend of drier than normal conditions for the Southeast, Southwest and Northeast regions. It was the driest July on record for the Southwest region and the second driest July since 1895 for the Southeast (Figure 13). It was the 11th driest July since records began for the Northeast and West regions. The June-July as well as the February-July periods for the Northeast region are the second driest in the 101-year period of record. July 1995 was the 19th wettest such month on record for the Northwest region (Figure 14).

National averaged temperature for the seven month period January-July for 1895-1995 is shown in Figure 4. The January-July 1995 temperature was above the long-term mean ranking as the 23rd warmest such period since 1895. Nine of the last ten such January through July periods have had temperatures above to much-above the long-term mean. For the year-to-date, only one percent of the country has averaged much cooler than normal while 6.4% of the country has averaged much warmer than normal.

Figure 5 shows the historical January-July national averaged precipitation. The year-to-date for 1995 was the 19th wettest such seven-month period since records began. Five of the last seven January-July periods averaged above to much above normal, which stands in sharp contrast to the dryness of the mid to late 1980's. For the year-to-date, ten percent of the country has averaged much drier than normal while over twenty percent of the country has averaged much wetter than normal. When the local normal climate is taken into account, January-July 1995 ranked as the 19th wettest such period since 1895 (Figure 6).

Figure 7A shows, in illustrative map form, the July 1995 temperature rankings for the 48 contiguous states. Eleven states were within the top ten warm of the historical distribution for the month of July including the third warmest July on record for Maryland, and the fifth warmest for Louisiana and Maine. Eighteen other states were within the warm third of the historical distribution. July 1995 was the ninth coolest such month on record for Colorado and the tenth coolest for Utah. Five other states were within the cool third of the historical distribution.

July 1995 state ranks for precipitation are shown in Figure 7B. It was the second wettest July on record for North Dakota while eight other states were within the wet third of the historical distribution. Fourteen states had their top ten driest or drier July on record including the driest July since records began for Arizona, New Mexico, and West Virginia. It was the second driest July since 1895 for Alabama and the third driest for Kentucky, Utah, and Virginia. An additional fourteen states were with the dry third of the distribution. It must be stressed that, when the final values for precipitation are calculated, these ranks *WILL* change due to the use of a denser station network. ***It should also be noted that the July state precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.***

State temperature and precipitation ranks for the seven-month period, January-July 1995, are shown in map form in Figures 8A and 8B. Only Maryland, having their ninth warmest such seven month period, was within the top ten warm category while no states ranked within the top ten cool category (Figure 8A). No states were within the cool third portion of the historical distribution however, 26 states rank within the warm third of the historical distribution for 1995 thus far. It was the driest year-to-date for New York, the third driest for Vermont, and the fourth driest year-to-date for Delaware and Pennsylvania (Figure 8B). Five other states were within the top ten dry portion of the distribution along within an additional eleven within the dry third of the distribution. It was the wettest year-to-date for Idaho and the second wettest such period for California, Colorado, Nevada, and Utah. South Dakota had their seventh wettest January-July period while North Dakota had the ninth wettest such seven month period. Twelve other states were within the wet third of the historical distribution for the year-to-date.

There was a slight increase in the percent area of the country experiencing severe to extreme drought while the portion of the country dominated by severe to extreme wetness fell about five percent. Nationally, long-term drought conditions (as defined by the Palmer Drought Index) for July 1995 increased to 4.9% of the country while the percent coverage of severe to extreme wet area fell to about 28.9% of the country (Figure 9). Table 2 lists the precipitation ranks and statistics for selected river basins for the 1994-1995 Hydrologic Year thus far. The core wet areas included the central Mississippi valley region, northern and central Great Plains, the northern and central Rockies, the Great Basin, the interior Northwest and California. The Palmer dry areas included parts of the southern High Plains, mid-Atlantic, upper Great Lakes region, much of the Northeast region, and portions of the interior Southeast.

Table 3 shows extremes, 1961-90 normals, and the July 1995 values for both precipitation and temperature for the nine regions and the contiguous U.S.

Precipitation averaged across the Primary Corn and Soybean Belt was above normal for the five-month growing season to date (Figure 10).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 170 tornadoes across the contiguous United States in July 1995. The 1953-1994 average tornado count for July is 92. Extremes of July include a minimum of 31 tornadoes in 1953 and a maximum of 240 in 1993. For the year-to-date, 1092 tornadoes have occurred. This is a new record for the January through July period, and compares to the average of 626. The January-July extremes are 1092 in 1995 and 353 in 1953. It should be noted that the preliminary tornado count is generally higher than the final count.

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1995. 1 = DRIEST/COLDEST, 101 = WETTEST/WARMEST FOR JULY 1995, 101 = WETTEST/WARMEST FOR JUN-JUL 1995, 101 = WETTEST/WARMEST FOR FEB-JUL 1995, 100 = WETTEST/WARMEST FOR AUG 1994-JUL 1995.

REGION	JUL 1995	JUN-JUL 1995	FEB-JUL 1995	AUG 1994-JUL 1995
PRECIPITATION:				
NORTHEAST	11	2	2	3
EAST NORTH CENTRAL	52	8	40	44
CENTRAL	22	24	59	43
SOUTHEAST	2	16	19	53
WEST NORTH CENTRAL	71	62	96	91
SOUTH	38	35	66	72
SOUTHWEST	1	2	76	80
NORTHWEST	83	83	86	66
WEST	11	78	96	99
NATIONAL	8	12	65	77
TEMPERATURE:				
NORTHEAST	94	98	65	90
EAST NORTH CENTRAL	67	92	70	90
CENTRAL	76	72	60	76
SOUTHEAST	92	58	68	73
WEST NORTH CENTRAL	27	33	51	72
SOUTH	65	37	53	72
SOUTHWEST	29	8	52	73
NORTHWEST	29	27	78	78
WEST	33	9	52	54
NATIONAL	52	37	66	89

TABLE 2.
STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-JUL 1994-95, WHERE RANK OF 1 = DRIEST, 100 = WETTEST, BASED ON THE PERIOD 1895 TO 1995, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF JULY 1995.
RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	98	.0%	57.6%
PACIFIC NORTHWEST BASIN	92	.0%	33.5%
CALIFORNIA RIVER BASIN	98	.0%	100.0%
GREAT BASIN	100	.0%	100.0%
UPPER COLORADO BASIN	96	.0%	76.3%
LOWER COLORADO BASIN	80	.0%	.0%
RIO GRANDE BASIN	42	12.7%	3.9%
ARKANSAS-WHITE-RED BASIN	91	6.7%	32.5%
TEXAS GULF COAST BASIN	89	.0%	.0%
SOURIS-RED-RAINY BASIN	93	.0%	59.3%
UPPER MISSISSIPPI BASIN	76	.0%	10.3%
LOWER MISSISSIPPI BASIN	66	.0%	.0%
GREAT LAKES BASIN	12	21.6%	4.4%
OHIO RIVER BASIN	31	14.0%	2.4%
TENNESSEE RIVER BASIN	25	.0%	.0%
NEW ENGLAND BASIN	8	4.5%	.0%
MID-ATLANTIC BASIN	3	40.1%	.0%
SOUTH ATLANTIC-GULF BASIN	55	4.4%	2.2%

TABLE 3. EXTREMES, 1961-90 NORMALS, AND 1995 VALUES FOR JULY

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1995 PCPN
NORTHEAST	2.02	1968	6.57	1897	3.81	2.75
EAST NORTH CENTRAL	.85	1936	6.13	1993	3.61	3.46
CENTRAL	1.47	1930	8.27	1958	4.25	3.19
SOUTHEAST	2.94	1983	11.55	1916	5.56	3.54
WEST NORTH CENTRAL	.84	1917	5.56	1993	2.02	2.24
SOUTH	1.34	1980	6.04	1950	3.03	2.84
SOUTHWEST	.62	1995	3.51	1911	1.83	.62
NORTHWEST	.16	1953	2.05	1983	.73	.91
WEST	.00	1903	1.18	1984	.34	.08
NATIONAL	1.78	1930	3.85	1950	2.74	2.18

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1995 TEMP
NORTHEAST	66.1	1962	73.8	1955	69.3	72.2
EAST NORTH CENTRAL	64.0	1992	76.2	1936	70.2	71.0
CENTRAL	71.9	1947	81.2	1901	75.3	76.9
SOUTHEAST	76.3	1947	82.7	1993	78.6	80.7
WEST NORTH CENTRAL	62.7	1915	77.4	1936	69.5	68.0
SOUTH	78.0	1906	85.9	1980	81.3	82.0
SOUTHWEST	70.1	1912	75.9	1901	73.6	72.4
NORTHWEST	58.9	1993	70.6	1906	65.9	65.2
WEST	69.0	1903	78.2	1931	73.8	73.0
NATIONAL	71.4	1915	77.1	1936	73.9	74.1

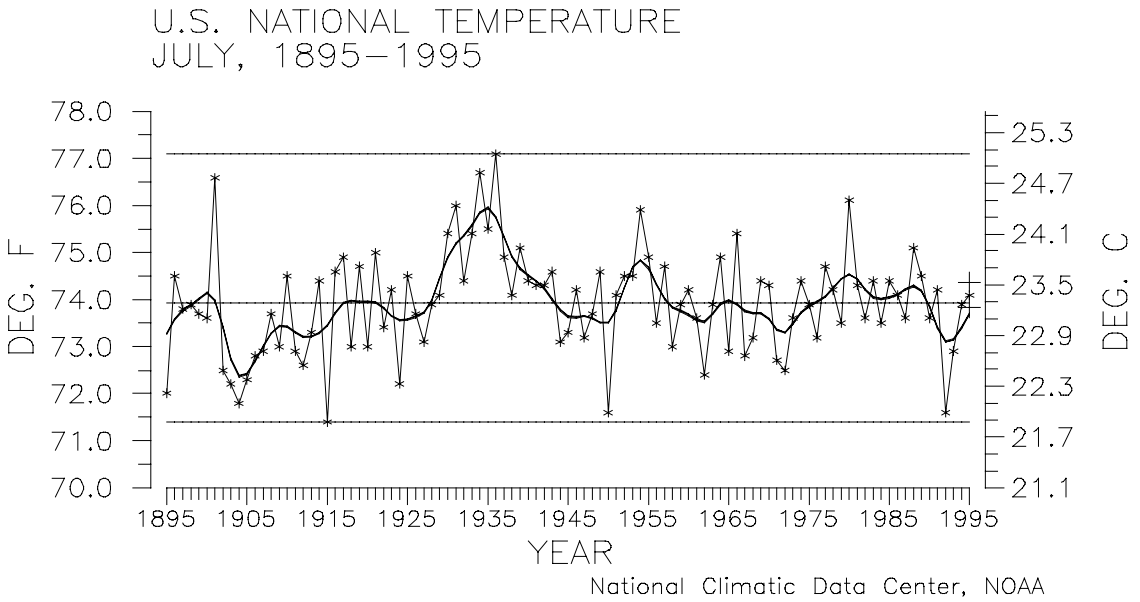


Figure 1

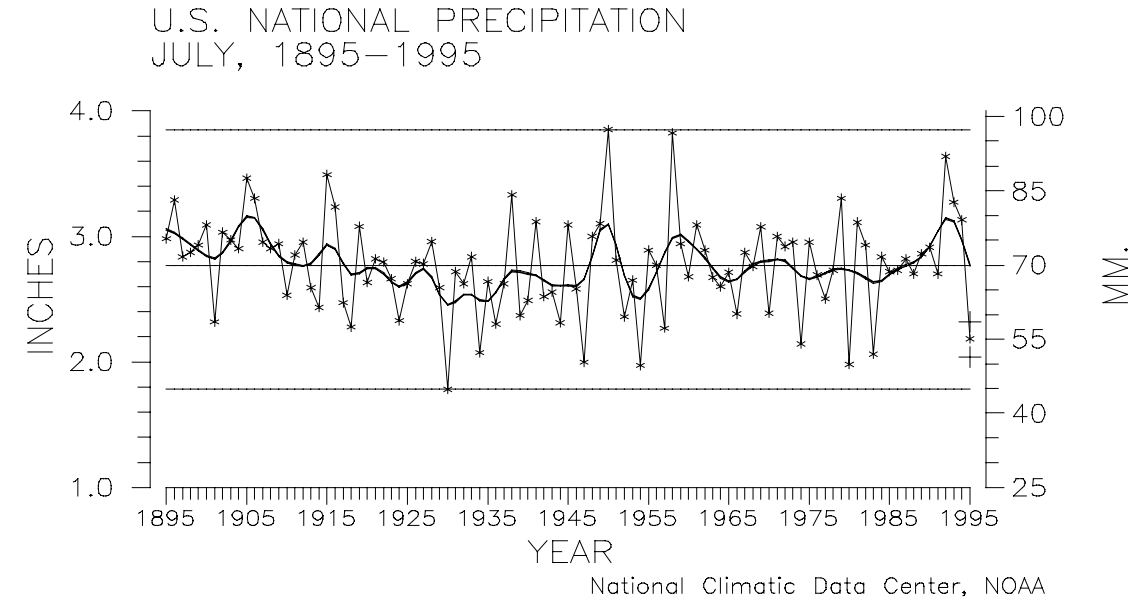


Figure 2

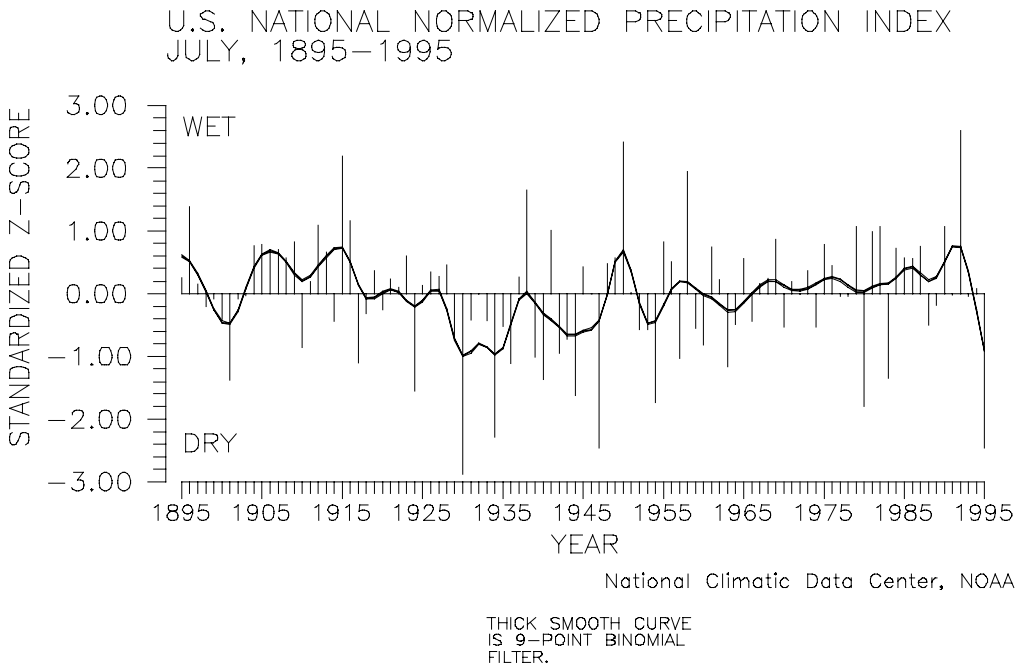


Figure 3

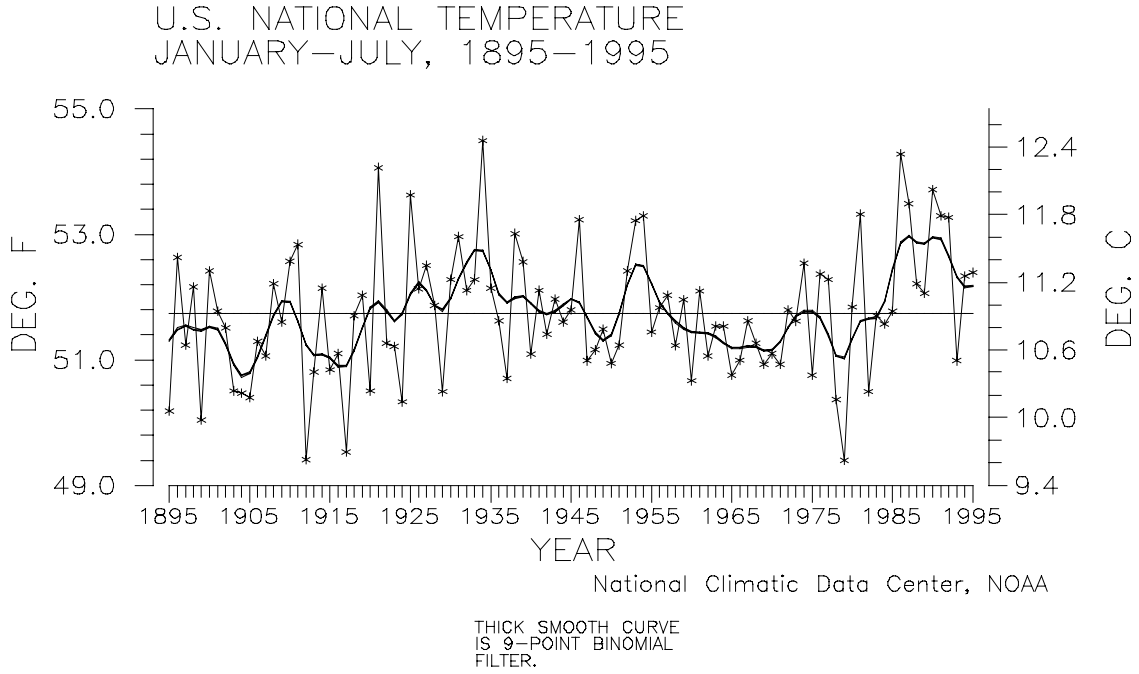
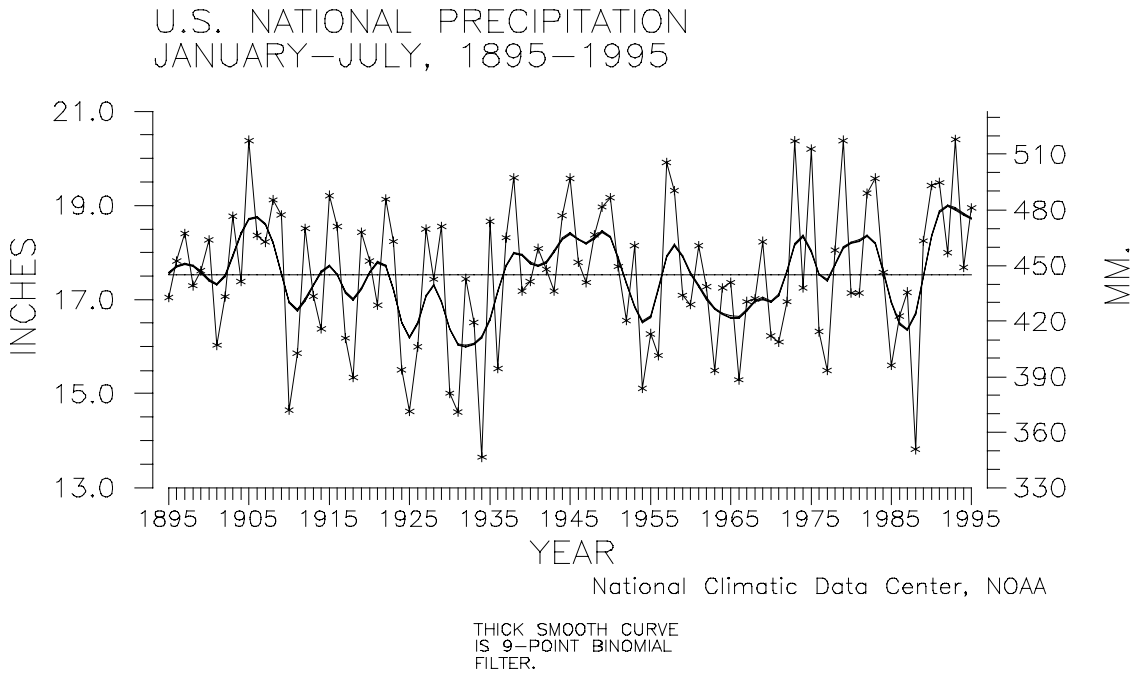


Figure 4



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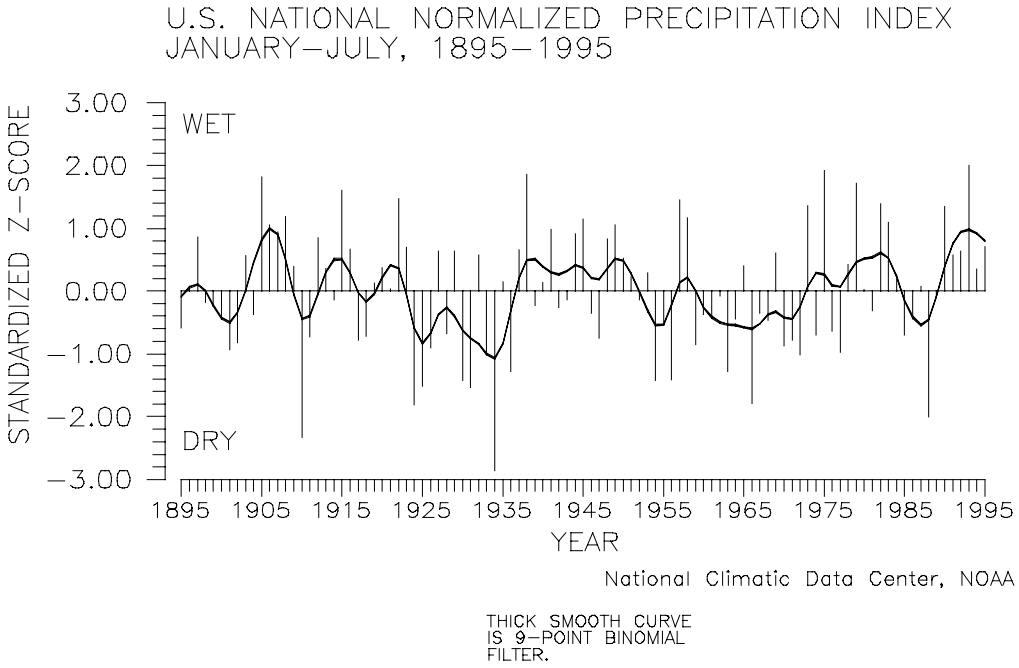

Figure 6

JULY 1995 STATEWIDE RANKS

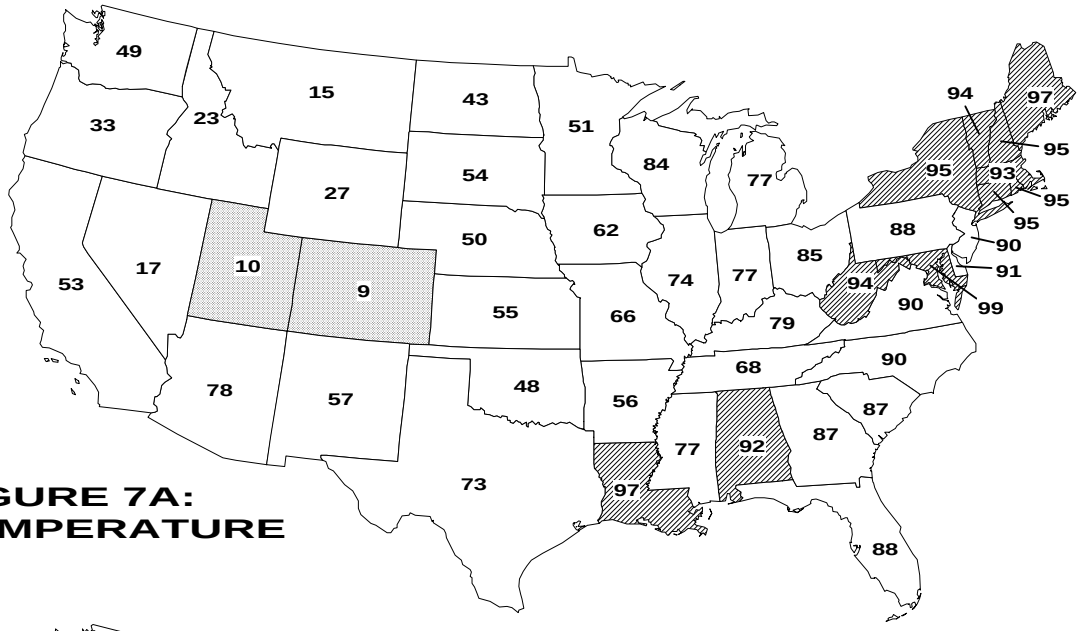

FIGURE 7A: TEMPERATURE

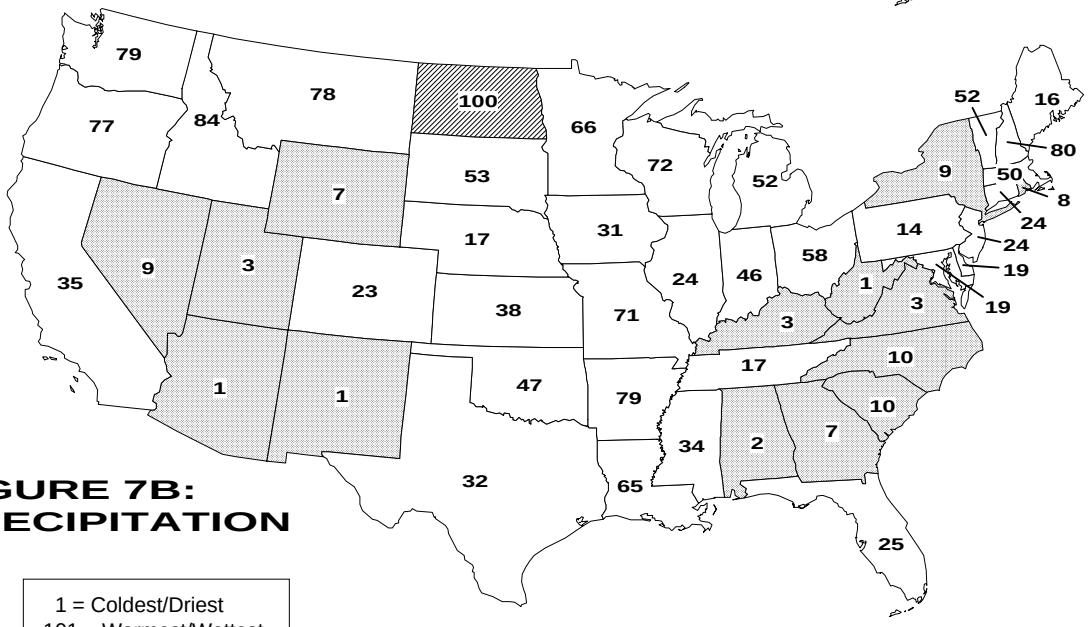

FIGURE 7B: PRECIPITATION

1 = Coldest/Driest
101 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

JAN-JULY 1995 STATEWIDE RANKS

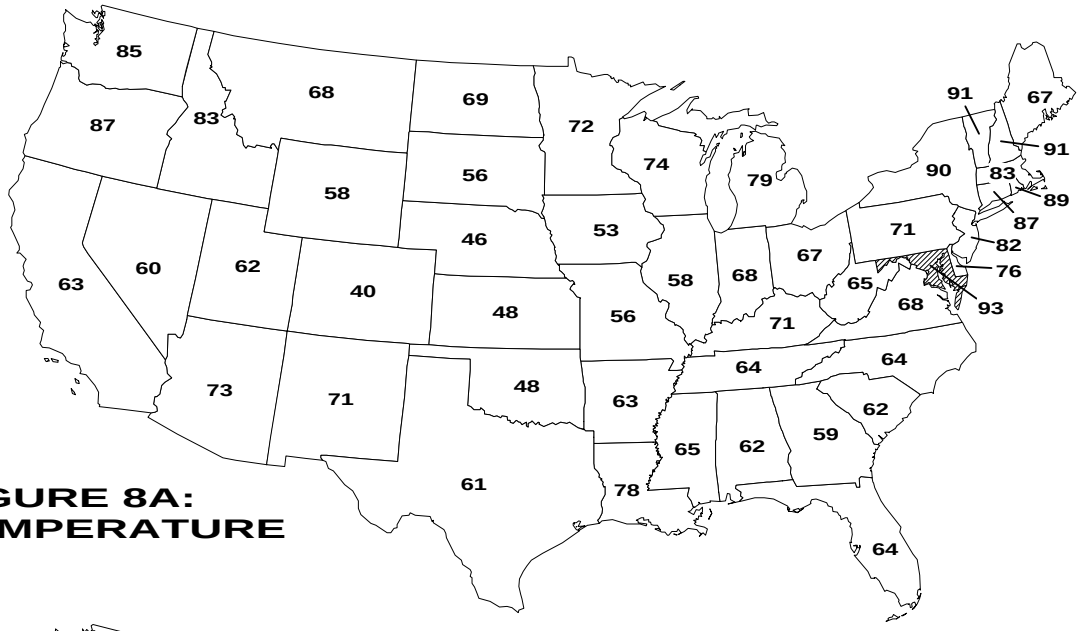

FIGURE 8A: TEMPERATURE

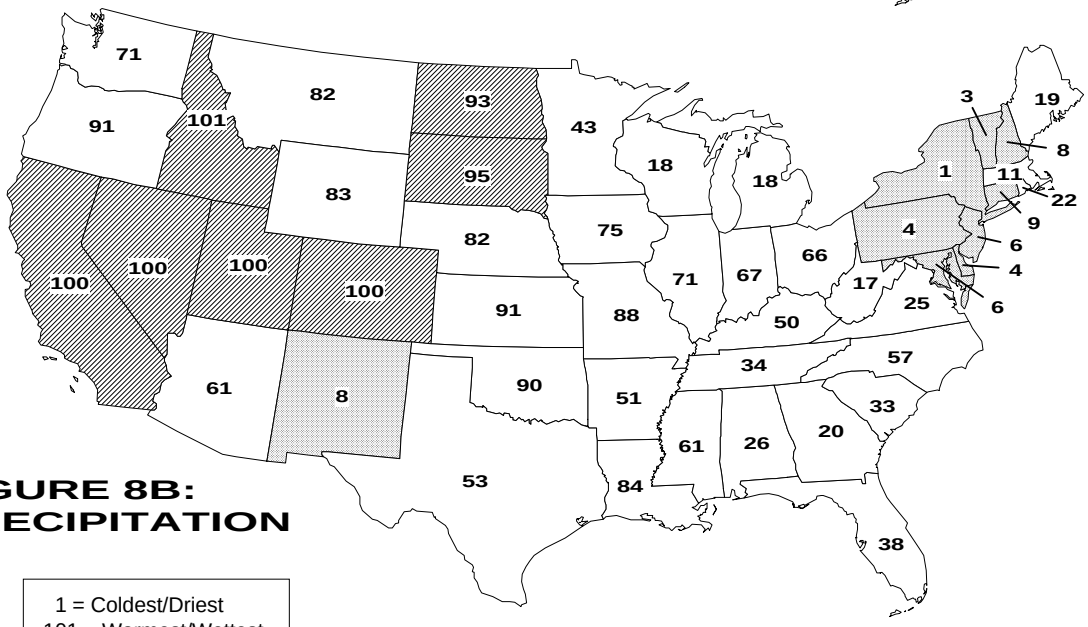

FIGURE 8B: PRECIPITATION

1 = Coldest/Driest
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National Climatic Data Center, NOAA

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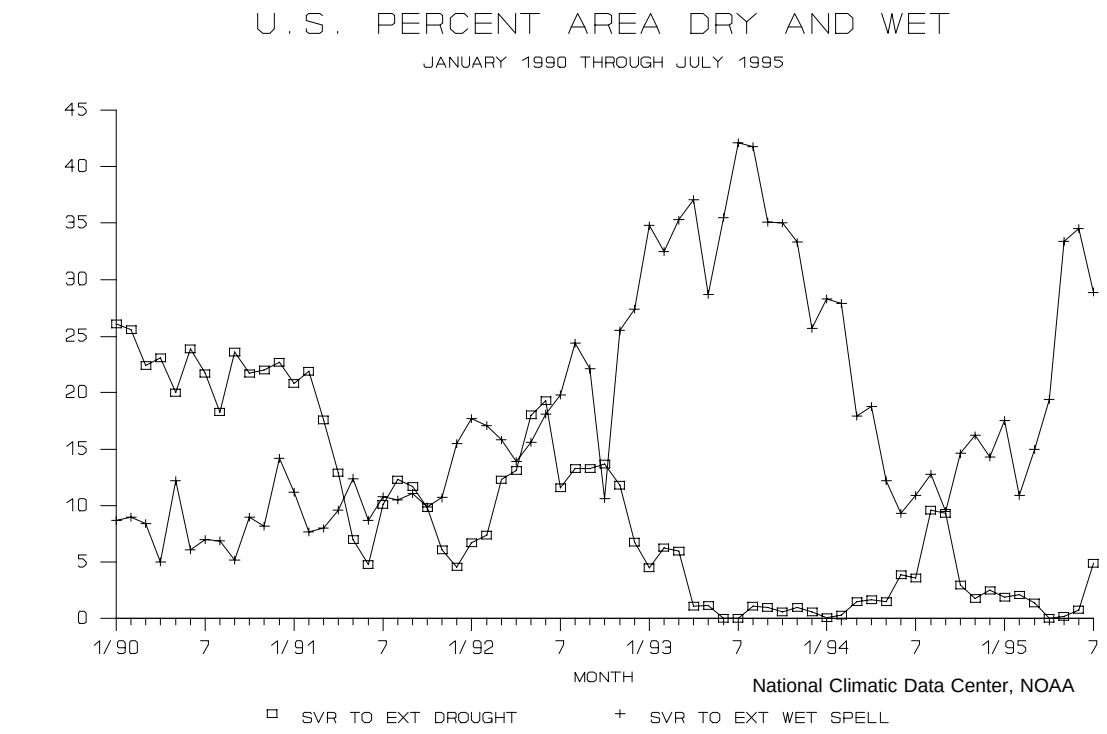

Figure 9

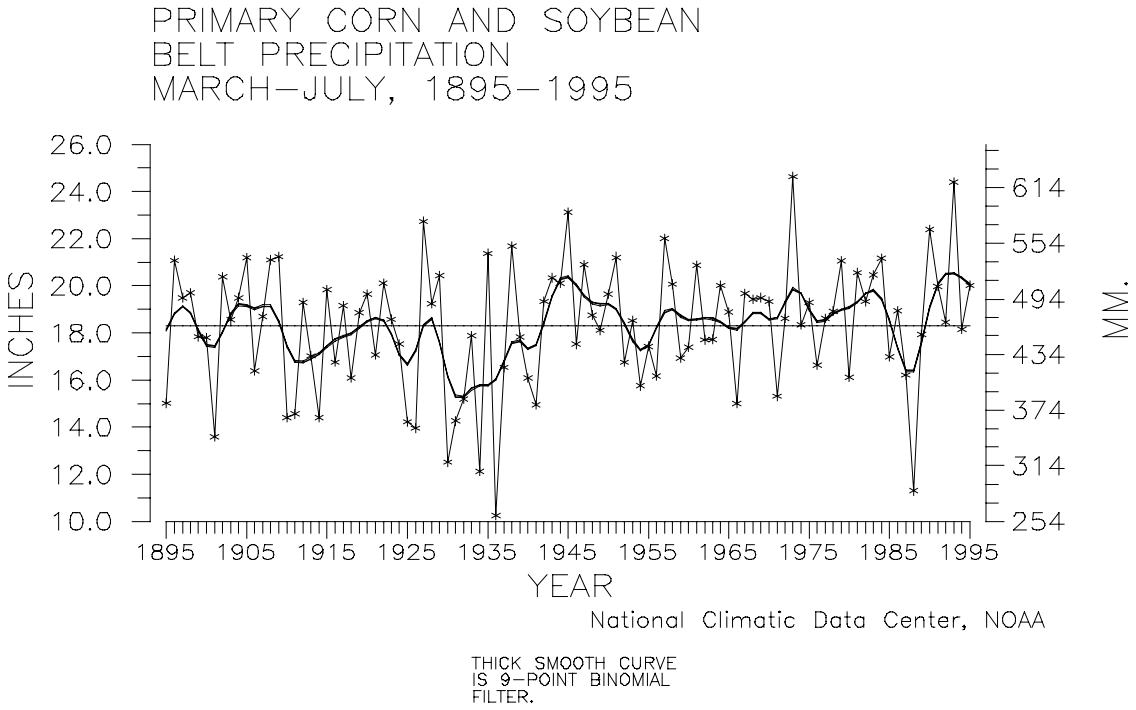

Figure 10

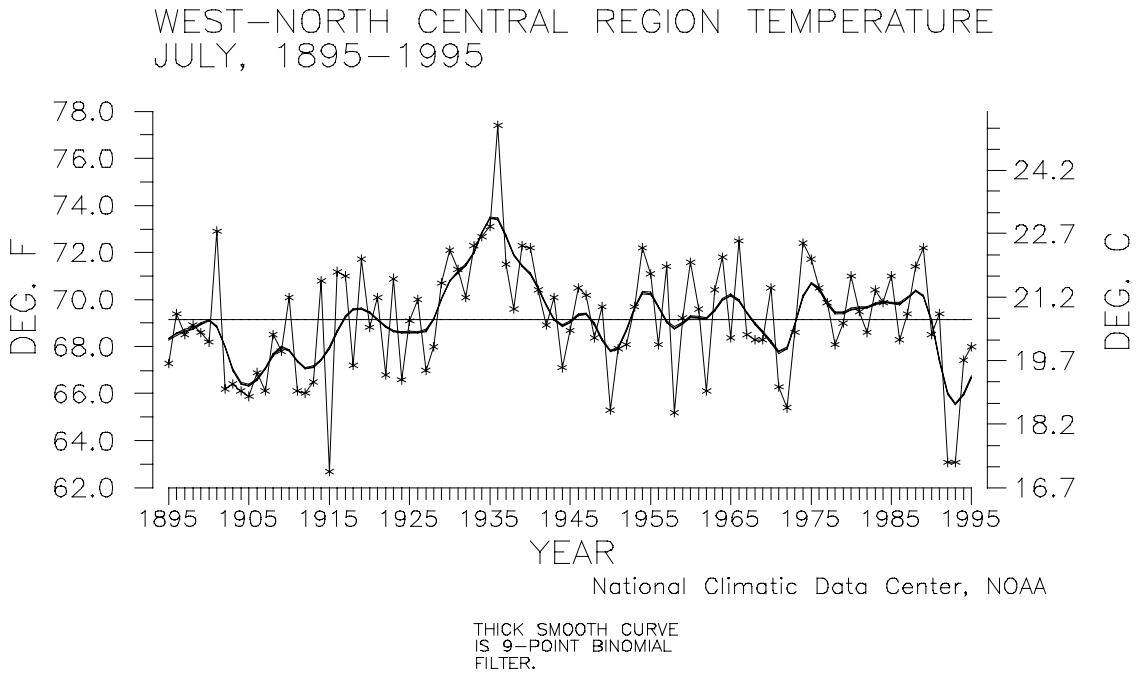

Figure 11

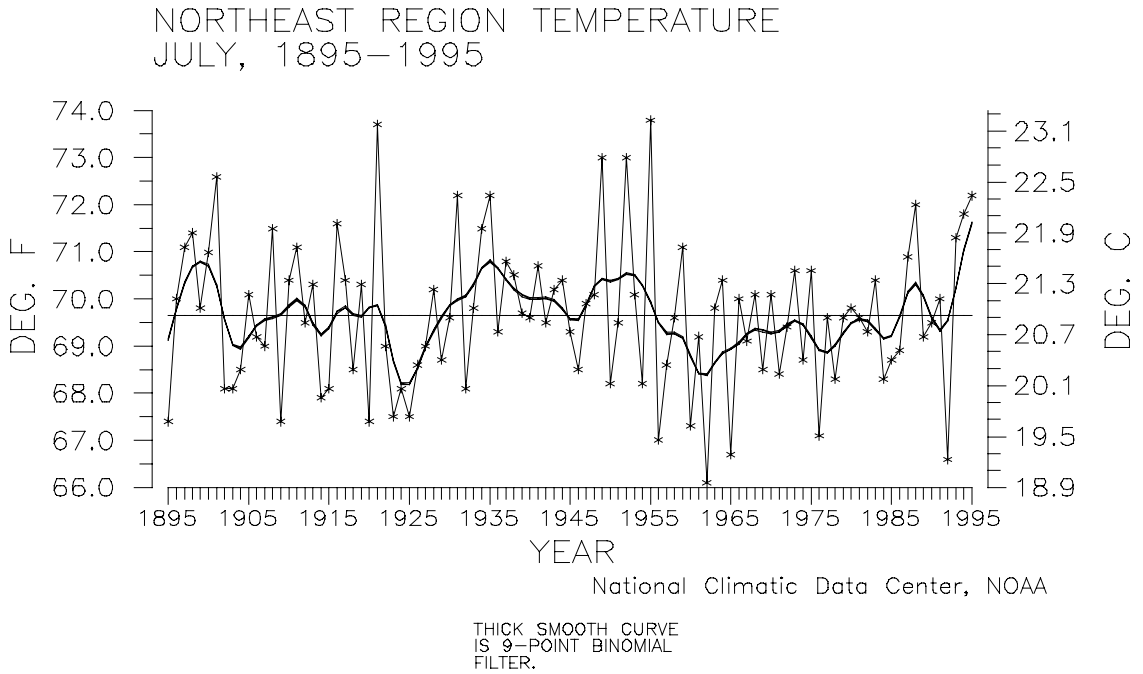

Figure 12

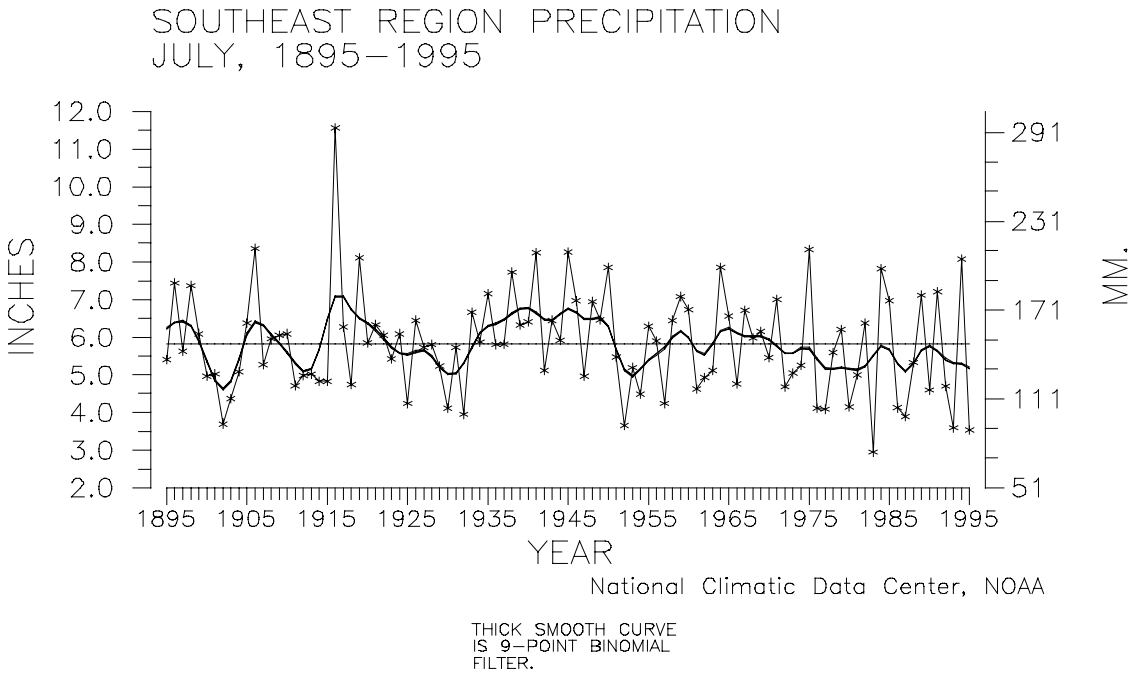

Figure 13

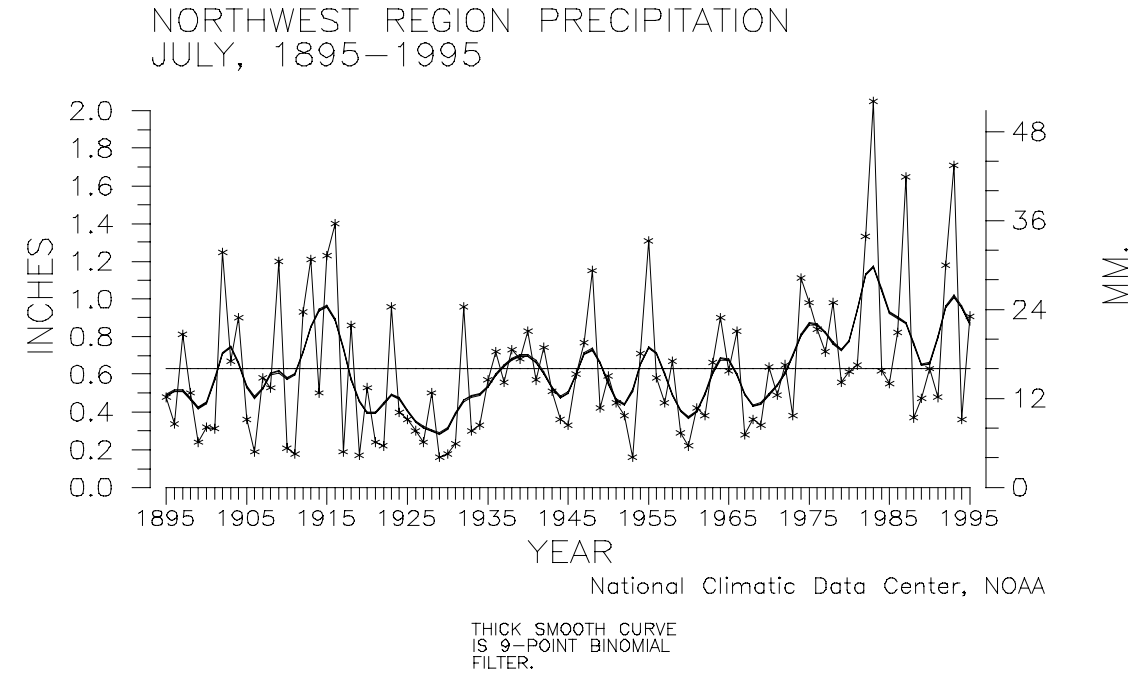

Figure 14